

Parthenogenesis in Ferns.

An interesting paper by Dr. William G. Farlow, late Assistant in the Botanical Department at Harvard University, and at the time a student in the laboratory of Professor De Bary, of Strasburg, entitled "An asexual growth from the Prothallus of *Pteris serrulata*," was read in January last at a meeting of the American Academy of Arts and Sciences, and is just printed in its 'Proceedings.' A fern, as is well known, comes to fructification and produces spores without any fertilization. The spores in germinating produce a liverwort-like structure, the prothallus, on which the two kinds of sexual organs are developed; the fertilization of a cell in the one by a spermatozoid from the other results in the development and growth of the former into a bud, and so into a fern-plant. Now Dr. Farlow has discovered, in a sowing of the spores of the common *Pteris serrulata*, prothalli which were developing fern-plantlets from their substance quite apart from any archegonium, starting in a different way by a direct outgrowth from the prothallus, beginning with a scalariform duct, but producing plantlets thus far undistinguishable from those which arise from an archegonium through fertilization. The paper is illustrated by figures, which show the earlier stages and the difference between this asexual outgrowth and the ordinary development.

Dr. Farlow, confining himself strictly to the facts of the case and their direct interpretation, does not use the word *parthenogenesis*. But the case seems to be substantially analogous to that of parthenogenesis in phænogamous plants, the few cases of which that have been probably, if not unequivocally, made out are much fortified by the present discovery. If it be demurred that the case is one of bud-growth and therefore not of the nature of parthenogenesis proper, the reply is that it comes from a parthenogenetic spore, which here develops plants without the sexual fertilization of that class of plants. The conclusion, if the facts hold good, is that sexual fertilization, however necessary, is not absolutely necessary in every generation of plants, somewhat as cross-fertilization, however necessary in the long run, is generally unnecessary in every generation; only the rule in the former is far more strict.—ASA GRAY in *Silliman's American Journal*, April 1874.

On New-Zealand Whales.

The Museum at Auckland has what Dr. Hector believes to be the foetus or very young of *Neobalæna marginata*; it is only $2\frac{1}{4}$ feet in length, and has the baleen perfect. All the characters agree exactly with the previous and larger specimen of that whale. It was called a calf of a right whale, the old one being described as of an enormous size!

Dr. Haast has received a fresh and complete animal of *Dolichodon*, perhaps *D. Layardi*; and he has also an *Epiodon*, the skeleton of which agrees with Burmeister's *Epiodon australis* in every part but the sternum; and in that it only differs slightly. Is it different from *E. chathamensis*.—J. E. GRAY.